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EXAMINER	
ODLAND, DAVID E	
ART UNIT	PAPER NUMBER
2662	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/367,396	MOTTISHAW ET AL.	
	Examiner	Art Unit	
	David Odland	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 December 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,12,13 and 17-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,12,13 and 17-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The following is a response to the amendments filed on 07/28/2004.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 40-42 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 40 through 42 recite that the location of the tap is selectable, the location of the tap is selectable independently of a network element and the location of the tap is independent of a network element, respectively. The specification does not adequately describe the location of the tap with any of these properties.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 35-39 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent number 4,730,313 to Stephenson et al., hereafter referred to as Stephenson.

Referring to claim 1, Stephenson discloses a method of monitoring an ISDN link (a method for ISDN channel diagnostics (see abstract and figure 2)), comprising the steps of monitoring an ISDN link using a passive probe connected to said ISDN link via a network tap (test logic is used to monitor the D-channel and is connected to the ISDN via a connection onto a bus between the test logic and the D-channel packet handler thus it is tapping in to the network to monitor the ISDN data (see figure 2)) at a first location to monitor subscriber signaling messages on an ISDN D channel to derive first monitoring data (test logic is used to perform various non-interruptive tests of the D channel (see column 6 lines 14-56)), monitoring at said first location, using said passive probe, telecommunications traffic traversing ISDN B channels associated with said ISDN D channel to derive second monitoring data (various diagnostic tests of the B channels are performed using the test logic (see column 6 lines 14-56)) and correlating said first and second monitoring data (particular B channel corresponding to the D channel is tested (see column 6 lines 45-56)) by selecting some of the second monitoring data and performing a predetermined action in accordance with that selected second monitoring data (when errors are indicated on the D channel a corresponding B channel is selected and passive B channel testing is performed such as signal-to-noise ratio and echo performance (see column 6 lines 45-56)).

Referring to claim 35, Stephenson discloses that the tap is coupled to the link (the test logic pins are coupled to the link being tested (see figure 2)).

Referring to claim 36, Stephenson discloses that the tap is located between network elements (the tap of the network is located between the service office and the user equipment (see figures 1 and 2)).

Referring to claim 37, Stephenson discloses that the tap is coupled to a link between network elements (the tap is coupled to the local loop 16 which is between the service office and the user equipment (see figures 1 and 2)).

Referring to claim 38, Stephenson discloses that the tap is physically inserted into a link (inherently, the tap of the test logic is physically in a link in order for the test logic to test the data streams of the ISDN link (see figures 1 and 2)).

Referring to claim 39, Stephenson discloses that the tap is coupled to a trunk (the tap is coupled to the local loop 16, which can be considered a 'trunk' (see figures 1 and 2)).

6. Claims 33 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Sahni (USPN 5,184,345), hereafter referred to as Sahni.

Referring to claims 33 and 34, Sahni discloses an apparatus for assembling service detail records for transactions carried over an ISDN link (a method for deriving billing-records of calls made over an ISDN (see abstract and column 8 lines 39-58)), comprising means for monitoring, via a tap, subscriber signaling messages on an ISDN D channel in an ISDN link (the customers network address or telephone number are received by a switch, which inherently has a tap, over the D-Channel and used to create the billing records (see items 220 and 270 of figure 1 and column 5 lines 40-48)), means for selecting D channel signaling messages relating to a transaction carried over said ISDN link in accordance with a predetermined criterion (customer

addresses are selected out of the control information traversing the D-Channel (see column 5 lines 12-48)); and means for assembling a service detail record for said transaction from said selected D channel signaling messages (billing-records for the customer and business are created and stored in a database (see column 8 lines 39-58)).

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 7-10 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Klingman et al. (USPN 5,721,729), hereafter referred to as Klingman.

Referring to claim 7, Klingman discloses a method of monitoring a telecommunications system having transmission channels and an associated signaling channel (a universal call processing system that monitors ISDN networks (see abstract and column 3 lines 58-67)), comprising the steps of monitoring, via a network tap, at a first location signaling messages on the signaling channel to derive first monitoring data (D-Channel messages are monitored by a controller, which inherently has a tap and the controller is part of the network (see item 54 of Figure 2 and column 3 lines 58-65 and column 4 lines 8-15)), selecting a transmission channel identified by reference to information contained in said first monitoring data (the universal processing system determines the type of data traversing the B-Channel that is associated with the monitored D-Channel (see column 4 lines 40-48)), monitoring, via said network tap,

telecommunications traffic traversing the selected transmission channel to derive second monitoring data (the B-Channel data is analyzed by the ISDN controller, which is part of the network, to determine what type of data is being transferred (see item 54 in Figure 2, column 3 lines 58-65 and 4 lines 40-48)) and extracting information that is traversing the selected transmission channel by reference to information contained in said second monitoring data (depending on the type of data that is determined to be traversing the B-channel, the data is accordingly processed by the system (see column 4 lines 51-57 and column 6)).

Referring to claim 8, Klingman discloses the monitoring method as discussed above. Furthermore, Klingman discloses that the transmission channel is an ISDN B channel and the signaling channel is an ISDN D channel (see columns 3 and 4)).

Referring to claim 9, Klingman discloses the monitoring method as discussed above. Furthermore, Klingman discloses that the transmission channel is carried by a telephone transmission link (the B-channels carry telephone calls (see figures 1 and 2 and column 6 lines 38-67)) and the signaling channel is carried by a common channel signaling link (the D-Channel is used by each B-Channel in the ISDN link and is thus a common signaling channel)).

Referring to claim 10, Klingman discloses the monitoring method as discussed above. Furthermore, Klingman discloses that the extracted information comprises DTMF signals (the universal processing system monitors and processes DTMF tones (see column 5 lines 24-67)).

Referring to claim 17, Klingman discloses the system discussed above. Furthermore, Klingman discloses that the monitoring is done in a passive nature (the ISDN calls are monitored and processed and thus there is no disturbance to the call (see column 6)).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 5,22,27 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stephenson.

Referring to claim 5, Stephenson discloses an apparatus for monitoring an ISDN link (a method for ISDN channel diagnostics (see abstract and figure 2)), comprising first equipment for monitoring an ISDN link using a passive probe connected to said ISDN link via a network tap (test logic is used to monitor the D-channel and is connected to the ISDN via a connection onto a bus between the test logic and the D-channel packet handler thus the network is being tapped for the ISDN data (see figure 2)) at a first location for monitoring subscriber signaling messages on an ISDN D channel to derive first monitoring data (the test logic is used to perform various non-interruptive tests of the D channel (see column 6 lines 14-56)), second equipment at said first location for monitoring, using said passive probe, telecommunications traffic traversing ISDN B channels associated with said ISDN D channel to derive second monitoring data (various diagnostic tests of the B channels are performed using the test logic (see column 6 lines 14-56)) and a correlation apparatus coupled to said first and second equipment to receive and correlate said first and second monitoring data (particular B channel corresponding to the D channel is tested (see column 6 lines 45-56)) by selecting some of the second monitoring data and

performing a predetermined action in accordance with that selected second monitoring data (when errors are indicated on the D channel a corresponding B channel is selected and passive B channel testing is performed such as signal-to-noise ratio and echo performance (see column 6 lines 45-56)). Stephenson does not disclose that there is a second, separate, piece of equipment at the same location for monitoring the B channels. Instead, Stephenson discloses that the D and B channels are monitored by the same piece of equipment, as discussed above. However, it would have been obvious to one skilled in the art at the time of the invention to separate the monitoring device taught by Stephenson into separate pieces because if the there are more than one pieces of monitoring equipment then the D and B channels transmitted and received at the second site can also be monitored with out the use of a loop-back feature, thereby making Stephenson more versatile. Another motivation to having a second piece of equipment at the second site if for back up purposes; if the monitoring equipment at the first site in Stephenson fails there is a second monitoring equipment that can be used, thereby making Stephenson more, reliable.

Referring to claims 22 and 27, Stephenson discloses the system discussed above. Stephenson does not disclose that the channel conditions are provided in a real-time update. However, It would have been obvious to one skilled in the art at the time of the invention to have the channel conditions updated in real-time to the network diagnostics controller because doing so will allow the system to react accordingly to the conditions faster than any other method, thereby making the system of Stephenson more reliable, faster and more efficient.

Referring to claim 31, Stephenson discloses the system discussed above. Stephenson does not disclose that the first monitoring data is derived from a plurality of D channels.

However, It would have been obvious to one skilled in the art at the time of the invention to have and derive the first monitoring data from plural D-channels because doing so would allow more B-channel to be handled, thus increasing the bandwidth of Stephenson and monitoring the extra D-channels for error would make the system of Stephenson more reliable.

11. Claims 12,13,19,23,24,28 and 29 rejected under 35 U.S.C. 103(a) as being unpatentable over Stephenson in view of Klingman.

Referring to claims 12,13,19,23,24,28 and 29 Stephenson discloses the method of monitoring an ISDN link as discussed above. Stephenson does not disclose that the correlation is performed to provide service records or that the service records include data derived from an ISDN B channel. However, Klingman discloses a call processing system that determines the type of user data appearing on B-channel(s) by analyzing the actual data of the B-Channel(s) (see column 4 lines 39-48). The system of Stephenson discloses that when an error threshold is reached on the D-channel, this indicates that it is likely that the B-channels also have errors and such B-channels may be torn down (see column 7 lines 20-25). However, different data types have different resistances to errors. Namely, voice calls require a high quality of service level and thus a low error rate whereas fax transmissions may be more resilient to the same error rate since the quality-of-service level is lower. Therefore, the thresholds of Stephenson may not work efficiently for all data types since fax transmissions may be unnecessarily treated the same as voice transmissions, thereby tearing down fax transmission circuits when the errors on these circuits are not completely detrimental to the transmission of such faxes and thereby wasting time and resources. It would have been obvious to one skilled in the art at the time of the

invention to use the method of determining the type of data in the B-Channels (thus derive a service record from the B-channel) as taught by Klingman, in the system of Stephenson, because doing so would allow Klingman to know the type of data passing through the B-channels and thus adjust its error thresholds accordingly, thereby making Stephenson more robust, reliable and efficient.

12. Claims 2, 3, 25 and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stephenson in view of Emerson et al. (USPN 5,784,558), hereafter referred to as Emerson.

Referring to claims 2 and 3, Stephenson discloses the system discussed above. Stephenson does not disclose that the method includes monitoring an additional signaling messages and B channels on a other links to derive third monitoring data and correlating the third monitoring data with the first and second. However, Stephenson does point out that the B channels and D channel are only assured of using the same media on the access circuit and therefore the Stephenson invention is only likely to provide an accurate indication of performance of these channels in the access circuit and thus not in other parts of the network, thus there is a need to test other portions of the network of Stephenson for errors since D and B channel errors may occur in these other portions. Emerson discloses a system wherein D and B channels (that travel through a DDS network) can be tested at not only at the access circuits but also at other parts within the network, specifically on the network side of the system (see figure 4). It would have been obvious to one skilled in the art at the time of the invention to monitor signaling messages, which correspond to the D and B channels, at other parts of the network because doing so will make the system of Stephenson more versatile and reliable.

Referring to claim 25, Stephenson discloses the discussed above. Stephenson does not disclose that signaling messages are SS7 messages. However, it would have been obvious to one skilled in the art at the time of the invention to use SS7 messages in the system of Orita because doing so would reduce developmental costs since SS& messages are part of a well-established signaling protocol and therefore a new type of signaling message does not have to be developed.

Referring to claims 40-42, Stephenson does not disclose that the tap is selectable, the location of the tap is selectable independently of a network element or the location of the tap is independent of a network element. However, Emerson discloses a system wherein a test unit can tap into various locations of an ISDN network (see figures 3 and 4 and column 14 lines 9-19)). It would have been obvious to one skilled in the art at the time of the invention to implement Stephenson with this feature because doing so would make the system more versatile and flexible since the testing location would not be limited to a single location in the network but could be performed at a variety of different places. Furthermore, if the test logic in Stephenson fails then replacing it would require the entire circuit board in the users equipment to be replaced and thus the equipment would not be functional during this period of time. Therefore, if the test logic was implemented as its own entity and was portable such that it could moved around and used at different testing locations of the network, as disclosed by Emerson, then the users equipment would still be functional even if the test logic failed, thereby making the Stephenson system more reliable.

13. Claims 4,6,18,20,26 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent number 5,533,007 to Orita et al., hereafter referred to as Orita in view of U.S. Patent number 4,730,313 to Stephenson.

Referring to claims 4 and 6, Orita discloses of an apparatus for monitoring an ISDN link, comprising first equipment for monitoring an ISDN link using a probe connected to said ISDN via a network tap (an ISDN monitor is connected to the ISDN in order to probe the ISDN and is connected via a tap, thus it is tapping into the network (see item 28 and its connection to the ISDN in Figure 1 and see the abstract)) for monitoring subscriber signaling messages on an ISDN D channel to derive first monitoring data (a monitoring device at a location monitors data received from the D channel of the ISDN link (see item 28 of figure 1 and column 4 lines 16-31)), equipment for monitoring additional signaling messages on a signaling link in a telecommunications network coupled to said ISDN link to derive second monitoring data (the signaling from not only the subscriber is monitored but also signaling related to the networks in which the subscribers information traverses such as the line connection network, LC-NW, and the call processing network, CPR-NW (see items 16, 24 and 28 of figure 1 and column 4 lines 51-62)), and correlation apparatus coupled to the equipment to receive and correlate said first and second monitoring data (the device is used to monitor the signaling channel of a particular subscriber, whose information traverses through multiple networks, hence there is a correlation between the subscribers D channel and the associated signaling of the other networks (see column 6 lines 1-6 and lines 40-42)). Orita does not disclose that the monitoring takes place using a passive probe. However, Stephenson discloses a system wherein ISDN D channels are monitored in a passive non-interruptive manner (see column 6 lines 14-56 and column 4 lines

56-68). It would have been obvious to one skilled in the art at the time of the invention to monitor the D channels of Orita in a passive manner, as taught in Stephenson, because doing so will prevent having to tear down or intrude on an active signal that is being used by subscribers. As such, users will not lose their connections and the service providers will prevent circuit downtime and thus prevent monetary loss. Also regarding claim 6, Orita does not disclose that there is a second, separate, piece of equipment at the same location for monitoring the B channels. Instead, Orita discloses that the D and B channels are monitored by the same piece of equipment, as discussed above. However, it would have been obvious to one skilled in the art at the time of the invention to separate the monitoring device, as taught by Orita, into separate pieces because if the there are more than one pieces of monitoring equipment then the D and B channels transmitted and received at the second site can also be monitored with out the use of a loop-back feature, thereby making Orita more versatile. Another reason to having a second piece of equipment at the second site if for back up purposes; if the monitoring equipment at the first site in Orita fails there is a second monitoring equipment that can be used, thereby making Orita more, reliable.

Referring to claims 18 and 20, Orita discloses the method of monitoring an ISDN link as discussed above, in the rejections of claims 4 and 6, respectively. Orita does not disclose that the correlation is performed to provide service records. However, it would have been obvious to one skilled in the art at the time of the invention to perform the process of correlation to provide service records, in the system of Orita, because such a process would help to efficiently maintain and monitor the system, thereby increasing its overall reliability.

Referring to claims 26 and 30, Orita discloses the discussed above. Orita does not disclose that signaling messages are SS7 messages. However, it would have been obvious to one skilled in the art at the time of the invention to use SS7 messages in the system of Orita because doing so would reduce developmental costs since SS& messages are part of a well-established signaling protocol and therefore a new type of signaling message does not have to be developed.

14. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Klingman.

Referring to claim 32, Klingman discloses the system discussed above. Klingman does not disclose that the transmission and signaling channels are carried in an ATM system. However, it would have been obvious to one skilled in the art at the time of the invention to use an ATM system in the system of Klingman because the ATM protocol can provide much higher bandwidth for data transmission and more extensive quality-of-service functionality (see ATM standard)).

15. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Klingman in view of Sahni.

Referring to claim 21, Klingman discloses the method of monitoring as discussed above. Klingman does not disclose correlating to provide service records. However, Sahni discloses keeping service records of users of an ISDN network for billing-purposes. It would have been obvious to one skilled in the art at the time of the invention to perform correlation for service records, as taught in Sahni, in the system of Klingman because such records will provide billing

methods for the service providers of Klingman, thereby making abilities of Klingman more robust.

Response to Arguments

16. Applicant's arguments filed 07/28/2004 have been fully considered but they are not persuasive.

On page 8 last paragraph through page 15 regarding independent claims 1,4-7,33 and 34, the Applicant argues that none of the primary references either describe or suggest that the monitoring is done via a "network" tap and rather the monitoring done in the references is done with internal or integral to specific network elements. The Examiner respectfully disagrees. With respect, the Applicant's arguments are faulty because the claim language does not recite that the tap cannot be integral or internal to a network element. Therefore, even if the taps in the references were integral or internal to the network element, they would still read on the claim language. The claims merely recite using a "network" tap. A 'tap' is known in that art as merely an electrical connection permitting signals to be transferred on of off a communications line and the term 'network' has a very reasonably broad interpretation. In this case, Stephenson discloses a electrical connection between the test logic and the ISDN channels (see figure 2), Sahni discloses an electrical connection between the 4ESS switch and the Billing-Records database (see items 220 and 270 in Figure 1), Klingman shows of an electrical connection between the ISDN controller and the ISDN network (see item 56 in figure 2) and Orita discloses that the ISDN monitor is electrically connected to the ISDN network via a connection to the LME (see item 28 in Figure 1). Furthermore, in each of these references the taps are monitoring network

traffic and thus the taps can be considered as part of the network, therefore they can be considered "network" taps. Also, the Applicant has stated in the arguments that the taps in the references are "internal to a ***network*** element", thus the taps in the references, even from the Applicant's arguments, can be considered "network" taps since they are internal to a *network* element. Furthermore, it is noted that the Applicant points out on page 8 last paragraph through page 9 first paragraph that "Thus, a network ***probe*** is connected to a trunk, i.e., between network elements." However, the claims recite that the *taps* are "network" taps but the claims do not recite that the *probes* are network probes.

Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Odland, who can be reached at (703) 305-3231 on Monday – Friday during the hours of 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached at (703) 305-4744. The fax number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist, who can be reached at (703) 305-4750.

deo

September 28, 2004

HASSAN KIZOU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600